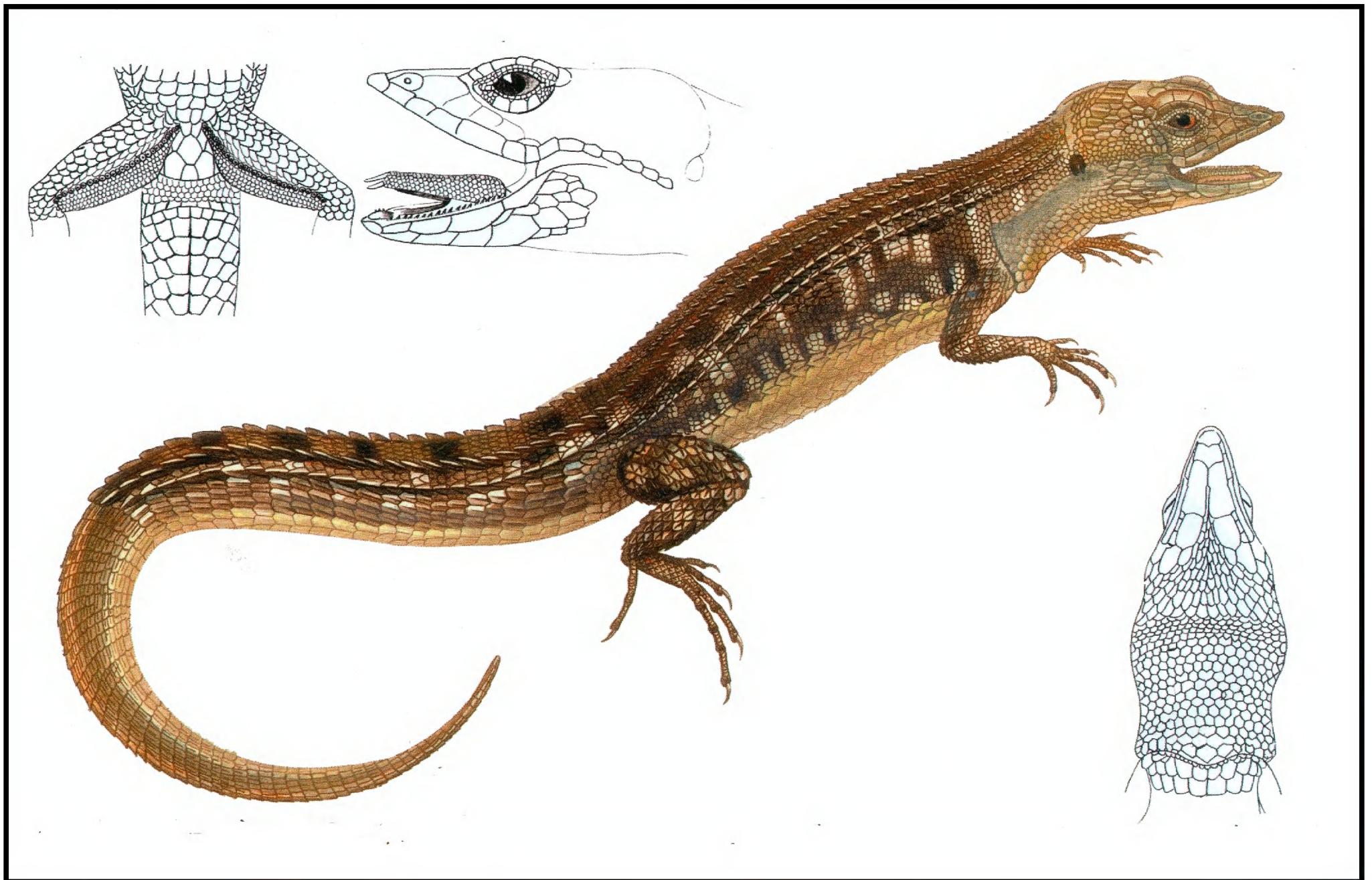

BULLETIN

of the

Chicago Herpetological Society



Volume 59, Number 1
January 2024



BULLETIN OF THE CHICAGO HERPETOLOGICAL SOCIETY
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Book Review: *Turtling: Following My Passion* by Robert Krause

2023. I-vii + 364 pp. + I-xxx. Sturnbridge Publishing.

Hardbound (ISBN 979-8-9886302-2-7), \$29.99. Softbound (ISBN 979-8-9886302-0-3), \$19.99.

eBook (ISBN 979-8-9886302-1-0), \$9.99

reviewed by
David G. Barker
vpi@beecreek.net

Turtling is available in both hardcover and softbound versions, and as an eBook. My hardcover edition has 364 numbered pages in 41 chapters and an epilogue. There are eight introductory pages and the manuscript ends with 30 single-spaced pages of the most extensive Acknowledgments I've ever encountered in a book.

You may ask, "What is turtling?" The easiest definition is that turtling is to turtles as birding is to birds. The author defines turtling as "the simple act of entering a turtle or tortoise's environment to get as close as possible to them, to photograph, study, or catch them, or sometimes just quietly observe them." He goes on to add that turtling is also a social activity; it is "the sharing of information, stories and experiences." It is turtle enthusiasts talking about turtles, gaining friendships, knowledge and memories.

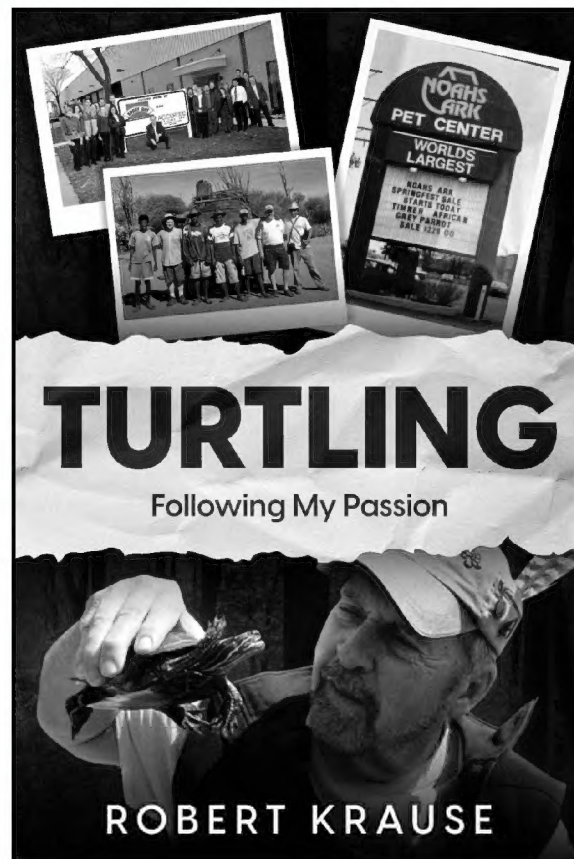
The book is illustrated with 34 black-and-white photographs. The author is included in 27 of those images. There are 10 images that include turtles, and one image that includes Dr. Peter Pritchard, which is almost the same as a turtle picture.

This book does not detail turtle husbandry, natural history, ecology or behavior. This book is the autobiography of the author, from four years of age in 1950 up to his current life on the Gulf Coast of Florida. It's a story of how the passion a boy felt for turtles became a life-long passion that has flowed through his entire life.

Robert Krause spent most of his professional life in the pet animal business. But I'm not talking about some small mom-and-pop pet store. Robert Krause became a towering giant in the pet industry. He was an entrepreneur and influential innovator working in the international markets of the pet industry. He became a force and a factor in the evolution that the pet industry—its stores, suppliers, associated manufacturing and distribution—underwent in the decades from the early 1970s to the present.

The first chapter, "Sticking My Neck Out," describes the opening day in November 1971 of Noah's Ark, billed as the largest pet store in the world. Noah's Ark was the creation and design, and dream of the author. The chapter relates the worry, energy, and effort that went into the opening of the 9,270 square feet of retail space. It was the 25-year-old's first store and he was going big.

The next chapters, 2–12, skip back to the early life and history of the author. His first interest in turtles began as a



young boy of 4. He accompanied his mother shopping at Woolworth's, and in those days Woolworth's had a pet section with an aquarium full of hatchling red-eared sliders. I, too, am old enough to remember Woolworth's in the 1950s and I have a similar memory from my own early age—I also wanted one of those turtles. The author did finally take a little slider home, along with the traditional acrylic bowl with a palm tree, and a bottle of turtle food that was mostly dried flies. This event began a lifelong interest and obsession with turtles—it fired a passion for turtling still with the author today.

From this beginning, the author tells his personal story growing up, highlighting the turtling events along the way. After high school, he tried college, but it was not a fit. He worked in a gas station for a while, and was a

Fuller Brush door-to-door salesman. He then enrolled in a computer class to learn programming. This was early in the history of computers, and it served him well. Drafted into the army in 1966 during the Vietnam War, he served in military intelligence at the Pentagon in Washington, D.C.

From chapter 13 through chapter 36, this story is not primarily about turtling or turtles. There are only scattered mentions and short scenes that include turtles in this major section of the book. What I consider to be the major theme of the book now becomes obvious—the story of how a strong childhood interest in and love of turtles became a passion, and that passion led the author to realize his talents and passions for pet stores and the pet industry. With this story, the author shows his extraordinary interest and abilities for entrepreneurship and innovation in nearly all aspects of the pet industry.

I found this personal history of the pet industry from the early 1970s through the mid-1990s to be very interesting. Like the author, in my younger years my interest in reptiles had me haunting pet stores whenever I could. I worked at Mural's Pet Center in Crystal Lake, Illinois, from 1969 to 1971. Krause mentions that he bought that store in 1979, and it became the seventh Noah's Ark store in its franchise expansion. In 1972, I became a partner in Tonga Pets in Macomb, Illinois. But that store folded about a year later. With my own experiences in the pet trade and pet stores, and my strong interests in just about all of the animals in the pet trade in the 1970s, I very studiously read the events and history of the animal trade as related by Krause.

I write tongue-in-cheek that in my experience, Robert Krause

is not a typical animal person—he understands business. He started with the ambitious effort to create the world’s largest pet store, and in the course of the following 20 years he built an international empire that included a successful franchise operation, importation and supply businesses, numerous inventions and innovations, and manufacturing. He created and supervised a corporate octopus with arms that reached throughout every aspect of the pet industry.

I never met Robert Krause, but scattered within this autobiography are many individuals who intersected my own life path, and, of course, this added to my enjoyment of the story. However, most folks with animal passions and interests will find this book a fascinating read. The pet shop industry still has mom-and-pop small pet stores scattered across the country, but the industry has come to be dominated by much larger, mostly franchised stores; this book well illustrates how that came about.

Chapter 37 begins with life after the author’s retirement from business. The remaining five chapters of the book are, indeed, a return to the passion of turtling. The stories include travels the author made to see some of his favorite turtles, particularly tortoises, in their native ranges and natural habitats. The more exotic destinations include Madagascar, the Amazon River, and the Galapagos Islands. Closer to home are stories of trips and turtles that include desert tortoises, box turtles, a bog turtle and a hawksbill. Painted turtles and snapping turtles are favorite species that turn up in several places in the book.

The book concludes with discussions on turtle conservation and captive breeding. In the Epilogue, a short final section of the book, the author reviews the non-profit organizations that support research, propagation, and the conservation of turtles. The author ends his story with this instruction: “Keep on turtling!”

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Mexican Geographical Distribution Notes 11: First State Records of Three Species of *Thamnophis* (Serpentes: Natricidae) from Sinaloa and Notes on the Distribution of the Genus in the “Golden Triangle” Region of Mexico

**Christoph I. Grünwald^{1,2,3*}, Marco A. González-Bernal⁴, Edmi I. Rojas-Aguilar⁵, Ricardo Ramírez-Chaparro³,
Iván T. Ahumada-Carrillo^{2,3} and María del Carmen G. Mendoza-Portilla³**

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Abstract

We extend the known range of the gartersnake species *Thamnophis errans*, *Thamnophis eques* and *Thamnophis unilabialis* in the central Sierra Madre Occidental mountains of western Mexico, and report these species from the state of Sinaloa for the first time. We give a new record for *Thamnophis melanogaster* from west-central Chihuahua, which extends its known range in that state. Combined, these records help fill in some significant gaps in the known distribution of these four species in this region.

Keywords: *errans*, *eques*, Gartersnakes, *melanogaster*, Sierra Madre Occidental, *unilabialis*

Resumen

Extendemos el rango de distribución conocido de las especies de culebras listonadas *Thamnophis errans*, *Thamnophis eques* y *Thamnophis unilabialis* en la zona central de la Sierra Madre Occidental del oeste de México, y reportamos estas especies para el Estado de Sinaloa por primera vez. Presentamos un nuevo registro para *Thamnophis melanogaster* del centro-oeste de Chihuahua, el cual extiende su área de distribución conocida en ese Estado. En combinación estos registros llenan algunos huecos importantes en la distribución conocida de estas cuatro especies.

Palabras claves: Culebra Listonada, *errans*, *eques*, *melanogaster*, Sierra Madre Occidental, *unilabialis*.

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Introduction

Thamnophis is a widespread genus in North America, with an extensive range from Canada across the United States and Mexico to Costa Rica in Central America (Rossman et al., 1996). Mexico is the most speciose country, and *Thamnophis* is one of the most widespread snake genera, with at least one species occurring in every state of the country. Two species of *Thamnophis* have been recorded from Sinaloa (Lemos-Espinal and G. R. Smith, 2020), however both of these species were recorded from low to moderate elevations. The high elevations of Sinaloa, while relatively well sampled, have not been adequately sampled for *Thamnophis*. Lemos-Espinal and G. R. Smith (2020) suggested no less than six additional species of *Thamnophis* may occur in the highlands of Sinaloa, based on the continuity of high-elevation habitat with nearby states.

Herein, we report on several observations made between 2017 and 2022 in the central portion of the Sierra Madre Occidental. These observations were made in the general *Triangulo Dorado* (Golden Triangle) region where the state boundaries of Sinaloa, Chihuahua and Durango meet. Some were accidental observations made by MGB and ERA while searching for a presumably extinct woodpecker, *Campephilus imperialis* (Gould 1832), on high elevation plateaus, whereas others were found by RRC specifically while looking for unknown populations of *Thamno-*

phis. We report three highland specialized *Thamnophis* from the state of Sinaloa for the first time. We also discuss their ranges in general, and provide some additional novel distribution records for the Golden Triangle region of western Mexico. We also report on a population of *T. melanogaster* from nearby Chihuahua, which also helps fill a range gap in that species' known range. Photographs of specimens reported herein are included (Figures 1–3). Furthermore, we provide three range maps for *Thamnophis* for this general area, indicating the new records and previously published records (Figures 4–6). The identities of all individuals were verified by Dr. Jacobo Reyes-Velasco.

Distribution Records

Institutional collections cited: MVZ = Museum of Vertebrate Zoology, University of California, Berkeley; NHMUK = Natural History Museum in London; SDNHM = San Diego Natural History Museum; TCWC = Texas A&M University, College Station; UTA = University of Texas at Arlington; UTEP = University of Texas at El Paso.

Thamnophis errans

Mexico: Sinaloa: Municipio de Badiraguato: Santa Gertrudis (25.65428°N, 107.00400°W; WGS84; 2472 m elev.), 06 July 2021. Marco A. Gonzalez-Bernal and Edmi I. Rojas-Aguilar. Photo voucher of this individual was deposited in the University

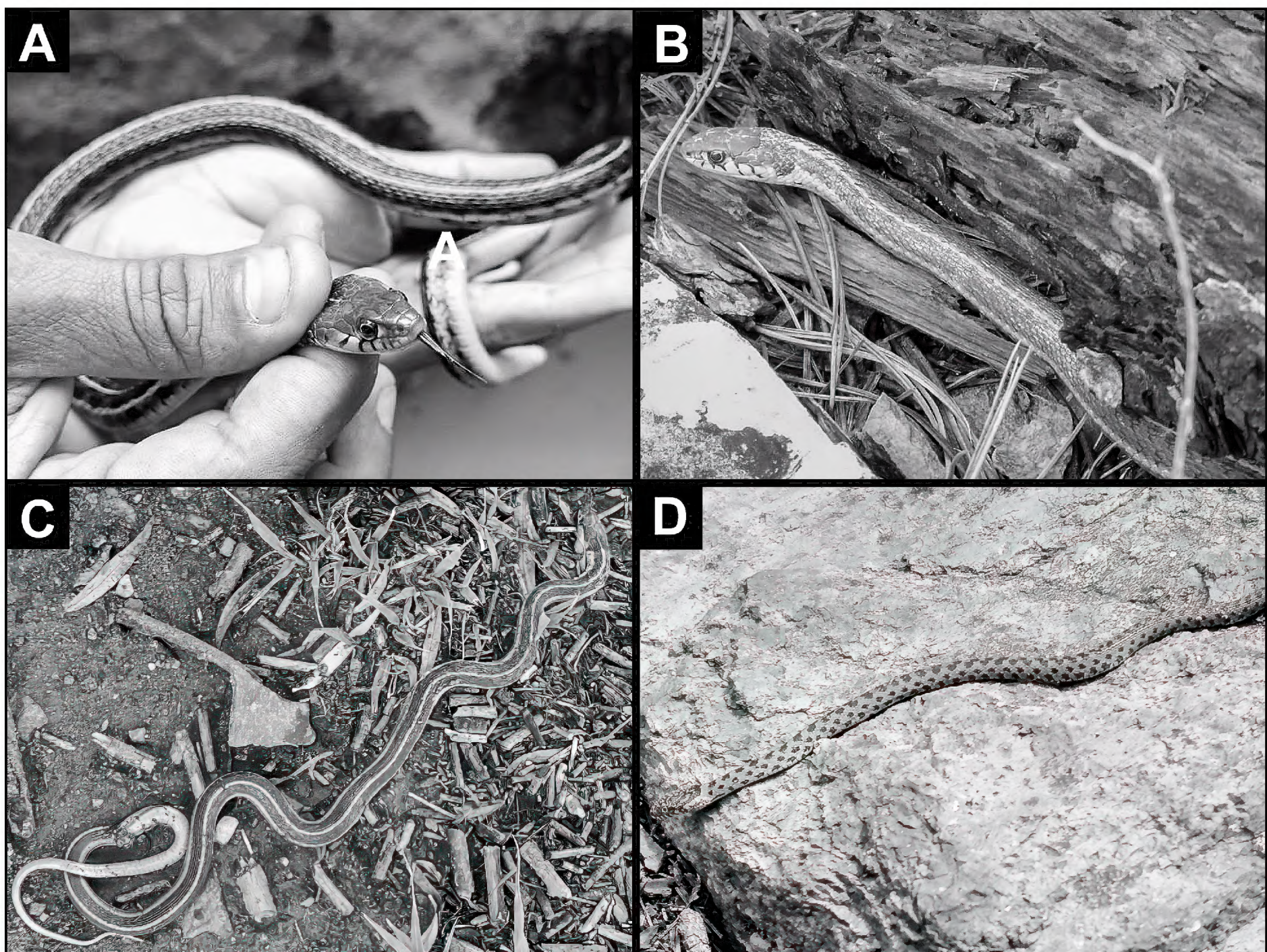


Figure 1. *Thamnophis* from Sinaloa reported herein: **A)** *Thamnophis errans* from Presa Santa Gertrudis, Municipio de Badiraguato, Sinaloa. **B)** *Thamnophis errans* from Puerto La Esperanza, approximately 0.7 km W of Santa Gertrudis, Municipio de Badiraguato, Sinaloa. **C)** *Thamnophis errans* from the stream in Santa Gertrudis, Municipio de Badiraguato, Sinaloa. **D)** *Thamnophis unilabialis* from Arroyo San Luisito, approximately 2.3 km SE of Santa Gertrudis, Municipio de Badiraguato, Sinaloa. All photographs by Marco González-Bernal and Edmi Rojas-Aguilar.

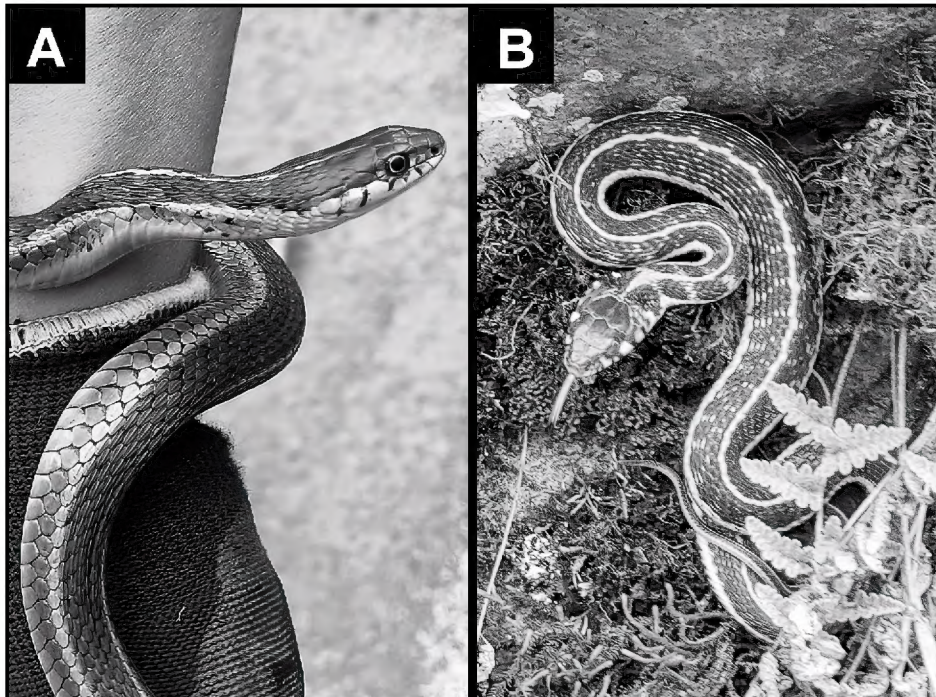


Figure 2. *Thamnophis* from Sinaloa reported herein: **A)** *Thamnophis errans* from Arroyo de Agua Fría, Santa Gertrudis, Municipio de Badiraguato, Sinaloa. **B)** *Thamnophis eques* from a stream in Santa Gertrudis, Municipio de Badiraguato, Sinaloa. Photographs by Marco González-Bernal and Edmi Rojas-Aguilar.

of Texas Arlington, Digital Collection (UTADC 9863); added to the iNaturalist platform as: <https://www.inaturalist.org/observations/195582555>; El Puerto de la Esperanza, Santa Gertrudis (25.6800°N, 107.0267°W; WGS84; 2464 m elev.), 06 July 2021. Marco A. Gonzalez-Bernal and Edmi I. Rojas-Aguilar. Photo vouchers of the individual were deposited in the University of Texas Arlington, Digital Collection (UTADC 9864a, b); added to the iNaturalist platform as: <https://www.inaturalist.org/observations/195582554>; Arroyo de Agua Fría, Santa Gertrudis, (25.6739°N, 107.0148°W; WGS84; 2489 m elev.), 04 April 2020. Marco A. Gonzalez-Bernal and Edmi I. Rojas-Aguilar. Photo vouchers of the individuals were deposited in the University of Texas Arlington, Digital Collection (UTADC 9869); added to the iNaturalist platform as: <https://www.inaturalist.org/observations/195582569>; Presa Santa Gertrudis, Santa Gertrudis, (25.6739°N, 107.0148°W; WGS84; 2489 m elev.), 18 May 2021. Marco A. Gonzalez-Bernal and Edmi I. Rojas-Aguilar. Photo voucher of this individual was deposited in the University of Texas Arlington, Digital Collection (UTADC 9868); added to the iNaturalist platform as: <https://www.inaturalist.org/observations/195582958>. The five localities above are all within two kilometers of Santa Gertrudis,

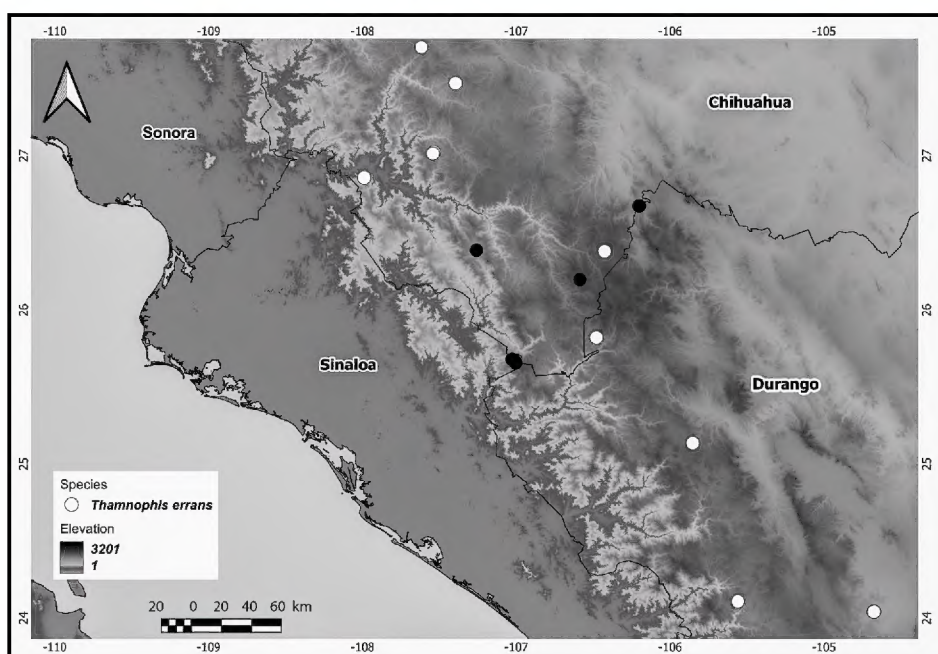


Figure 4. The Golden Triangle region of Chihuahua, Durango and Sinaloa, showing records of *Thamnophis errans*. Historical records taken from GBIF (2023) are shown in white. Records reported herein are solid black.

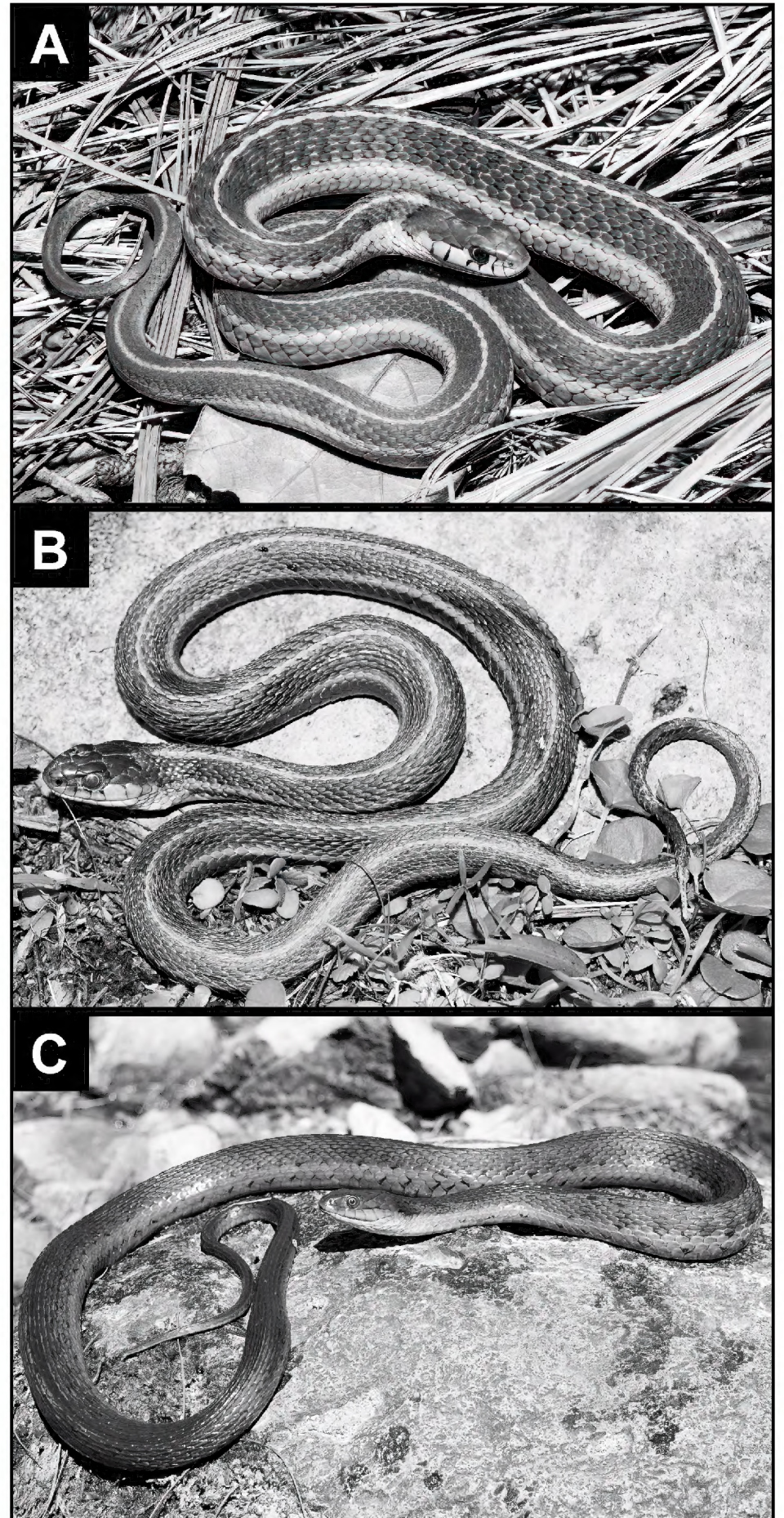


Figure 3. *Thamnophis* from Chihuahua reported herein: **A)** *Thamnophis errans* from Catedral, Municipio de Guadalupe y Calvo, Chihuahua. **B)** *Thamnophis errans* from 4.6 km S of Baborigame, Municipio de Guadalupe y Calvo, Chihuahua. **C)** *Thamnophis melanogaster* from 5.4 km S of Baborigame, Municipio de Guadalupe y Calvo, Chihuahua. All photographs by Ricardo Ramírez-Chaparro.

Municipio de Badiraguato.

Mexico: Chihuahua: Municipio de Guadalupe y Calvo: Catedral (26.198700°N, 106.586700°W; WGS84; 2620 m elev.) This snake was found alive crossing the highway during the day. 14 November 2020. Ricardo Ramírez-Chaparro. Photo vouchers of the individual were deposited in the University of Texas Arlington, Digital Collection (UTADC 9872a–c); added to the iNaturalist platform as: <https://www.inaturalist.org/observations/195524070>; 4.2 km (airline) S of Baborigame (26.390638°N, 107.258540°W; WGS84; 1988 m elev.) Two snakes were found under rocks in a rockpile in a grassy field next to a small creek, amongst pine-oak woodland during the day. 24 July 2019. Ricardo Ramírez-Chaparro. Photo vouchers of the individuals

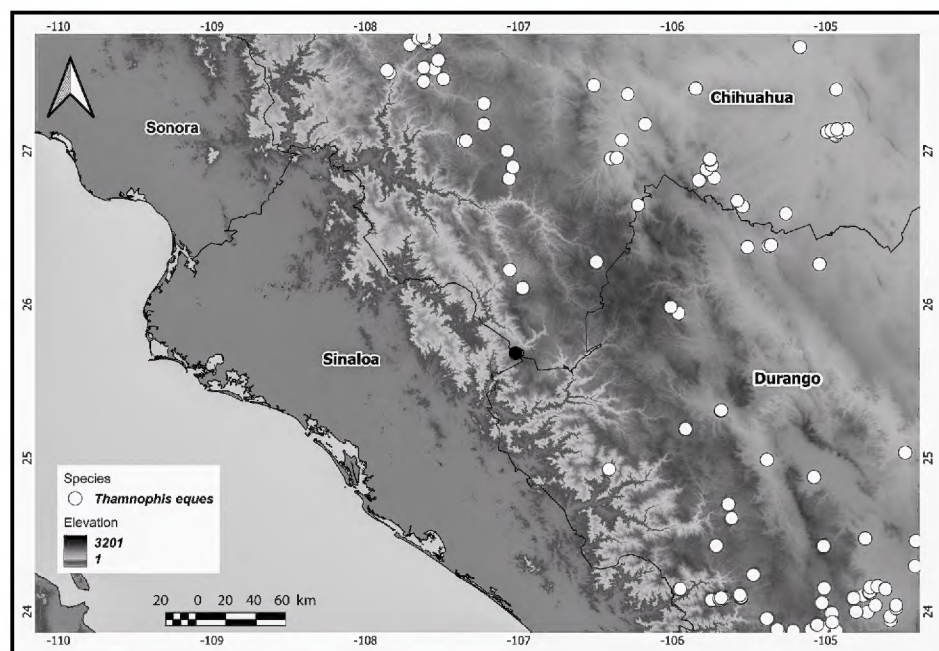


Figure 5. The Golden Triangle region of Chihuahua, Durango and Sinaloa, showing records of *Thamnophis eques*. Historical records taken from GBIF (2023) are shown in white. The record reported herein is solid black.

were deposited in the University of Texas Arlington, Digital Collection (UTADC 9873, 9874); added to the iNaturalist platform as: <https://www.inaturalist.org/observations/195582549> and <https://www.inaturalist.org/observations/195582551> respectively.

Thamnophis errans is endemic to the Sierra Madre Occidental from northeastern Sonora and northwestern Chihuahua south to Nayarit and Zacatecas (Rossman et al., 1996), and was recently reported from northern Jalisco (Ahumada-Carrillo et al., 2014). The photo vouchers presented herein, represent the first records for the state of Sinaloa, and also help fill a 410-km range gap in published records between Yoquivo, Municipio de Batopilas, Chihuahua (NHMUK 1911.12.12.20: Lemos-Espinal and H. M. Smith, 2007) and 6 mi WSW of Las Adjuntas, Municipio de San Dimas, Durango (MVZ 59284: Lemos-Espinal et al., 2019). At least two other records exist in this large portion of unexplored sierra, including one from “28 km SSW of Tepehuanes, Durango” (Lemos-Espinal et al. [2019], which gave no further information or references) and one unpublished record (UTA 57655) from Hwy. 24 (26.677220°N, 106.199750°W; WGS84; 1937 m elev.), Municipio de Ocampo, Durango. However, the Sinaloa records of *Thamnophis errans* reported herein still represent a range extension of at least 100 km NW from the Tepehuanes record and 140 km SW from the Ocampo record. The Chihuahua records reported herein help fill out the known distribution of this species in the mountainous southwestern portion of the state, and along with the Sinaloa records help fill a range gap of about 400 km between the Sierra Tarahumara in southwestern Chihuahua and the Hwy. 40 region of Durango (Lemos-Espinal et al., 2019).

Thamnophis eques

Mexico: Sinaloa: Municipio de Badiraguato: Arroyo Santa Gertrudis, ~0.8 km W of Santa Gertrudis (25.6840°N, 107.02030°W; WGS84; 2466 m elev.), 21 October 2022. Marco A. Gonzalez-Bernal and Edmi I. Rojas-Aguilar. Photo vouchers of the individual were deposited in the University of Texas Arlington, Digital Collection (UTADC 9865a, b); added to the iNaturalist platform as: <https://www.inaturalist.org/observations/195582556>. This is the first for the state of Sinaloa, and extends the known range of the species 45 km S of Guadalupe y Calvo, Municipio de Guadalupe y Calvo (Lemos-

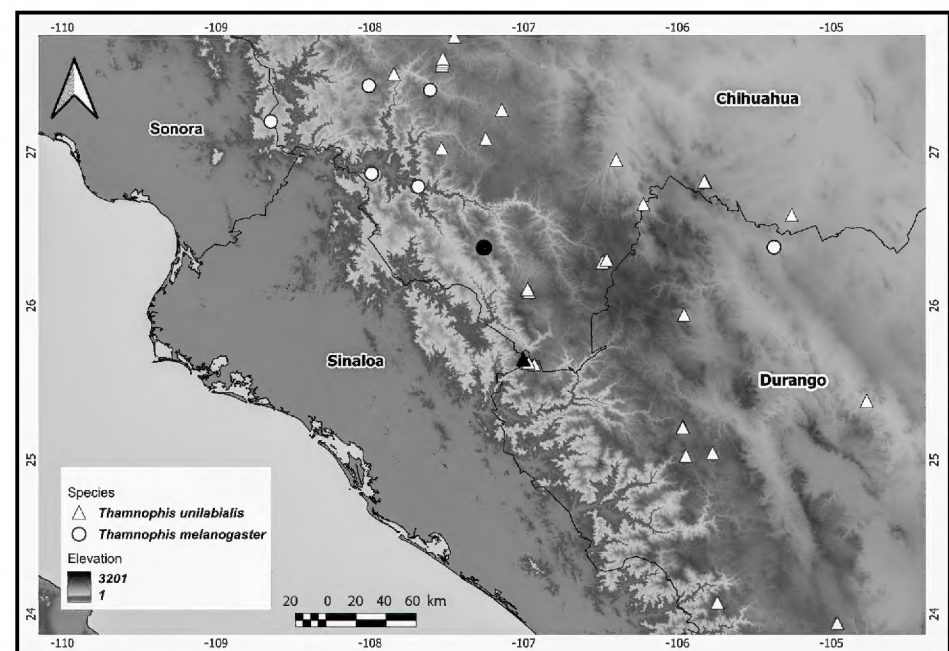


Figure 6. The Golden Triangle region of Chihuahua, Durango and Sinaloa, showing records of *Thamnophis melanogaster* and *T. unilabialis*. Historical records taken from GBIF (2023) are shown in white. Records reported herein for both species are solid black.

Espinal and H. M. Smith, 2007), and 68 km SW from Carreras, Municipio de Guanaceví, Durango (TCWC 92233; SDNHM 75653; GBIF, 2023). *Thamnophis eques* is a wide-ranging species that occurs from central Arizona south across most of the Mexican highlands and central plateau, south to Guerrero and Oaxaca (Rossman et al., 1996). Surprisingly, it had not been previously collected from Sinaloa, and the specimen here represents the first record from the state. This species is common in aquatic upland situations, and is likely present throughout the highlands of Sinaloa, including the south.

Thamnophis melanogaster

Mexico: Chihuahua: Municipio de Guadalupe y Calvo: 5.4 km (airline) S of Baborigame, (26.37935°N, 107.25881°W; WGS84; 1996 m elev.), 16 November 2017. Ricardo Ramírez-Chaparro. Photo vouchers of the individual were deposited in the University of Texas Arlington, Digital Collection (UTADC 9875a–c); added to the iNaturalist platform as: <https://www.inaturalist.org/observations/195523492>. This snake was found actively foraging in a stream on a mild morning, in pine-oak woodland.

Thamnophis melanogaster is an aquatic gartersnake which ranges from the highlands of southwestern Chihuahua, northwestern Durango and southwestern Coahuila south to Jalisco and east across the Mexican Transverse Ranges to Puebla, Hidalgo and Tlaxcala (Rossman et al., 1996). While common throughout most of its range, *T. melanogaster* appears to be uncommon in the north and it is rarely found in Chihuahua and northern Durango. The individual reported here fills a major range gap in the known distribution of this species, extending the range 189 km W of Canutillo, Municipio de Ocampo, Durango (MVZ 2359), 340 km NW of the Highway 40 region of Durango (various records) and about 120 km SSE of “36.8 km S and 2.4 km E of Creel” (Lemos-Espinal and H. M. Smith, 2007).

Thamnophis unilabialis

Mexico: Sinaloa: Municipio de Badiraguato: Arroyo San Luisito, ~2.9 km (airline) SE of Santa Gertrudis (25.654281°N, 107.00400°W; WGS84; 2400 m elev.), 23 August 2020. Marco A. Gonzalez-Bernal and Edmi I. Rojas-Aguilar. Photo vouchers of the individual were deposited in the University of Texas Arlington, Digital Collection (UTADC 9862a–e); added to

the iNaturalist platform as: <https://www.inaturalist.org/observations/195582553>.

Thamnophis unilabialis is a highly aquatic gartersnake, closely related to *T. rufipuncatus*. It inhabits the northern Sierra Madre Occidental in northeastern Sonora, western Chihuahua and northern Durango (Wood et al., 2011). This species is never common, although it can be rather abundant along larger streams and rivers providing ideal habitat (C. Grünwald, personal observation). The individual reported here represents the first record for the state of Sinaloa, however it is only a 7.5-km range extension northwest of the nearest record at 6 (road) miles SW of Los Frailes, Municipio de Tamazula, Durango (UTEP 9078: Tanner, 1985). *Thamnophis unilabialis* was considered by

Lemos-Espinal and G. R. Smith (2020) as a species potentially occurring in Sinaloa, but it had not been recorded there previously.

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We thank Sebastian Ochoa-Rodríguez for help in the field. We are extremely grateful to the guides Guillermo Macías-Vargas, Yodani Eduviel Orona-Ribota for their excellent help exploring the Sierra de Badriguato. We thank Gregory Pandelis from the University of Texas Arlington for the digital photo processing and for cataloguing the UTADC numbers. We are indebted to Biencom Real Estate and Herp.mx for providing funding for some of the field work. Jacobo Reyes-Velasco helped with verifying identifications, and reviewing the manuscript.

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Erratum: Mexican Geographical Distribution Notes 8

In the *Bulletin of the Chicago Herpetological Society* Volume 58, Number 11, the authors' addresses were given incorrectly for "Mexican Geographical Distribution Notes 8: *Rhadinaea taeniata*, a New State Record for the Herpetofauna of Colima, Mexico." The authors were: Juan Oscar Gómez-del Pozo¹, Daniel Cruz-Saenz¹, Francisco Javier Muñoz-Nolasco^{2,3}, Rosario Aceves-Íñiguez³, Estefanía Velazco-Radillo⁴ and Jacobo Reyes-Velasco⁵.

The correct addresses are:

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You Don't Need to Be Einstein: Becoming a Citizen Scientist

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Have you heard about the “insect apocalypse”? The press began using the term around 2020 to describe what researchers in Germany, Puerto Rico, and other areas were reporting: A 75% to 90% loss in insects since roughly 1970. Subsequent studies reported similar losses.

Almost immediately other scientists, as well as business and political leaders, began criticizing the term. Some said it was overly-dramatic; others said the press usually reported doom-and-gloom stories. A few, though, criticized the science. They said that in many cases, the research lacked a baseline. In terms of research (outside of baseball), a *baseline* is an established starting point, a basis of comparison.

The establishment of a baseline gave credibility to the German study and some others, but the absence of a baseline challenged many researchers. They simply lacked the resources to establish a baseline for their studies. Many sought data by turning to what is often called *citizen science*. That label itself is sometimes criticized (*community science* has been suggested as an alternative), but regardless of what the practice is called, it involves the contributions of nonspecialists in gathering data, and in some cases interpreting and designing studies, for active researchers.

Although the involvement of amateurs bothers some scientists, a number of the greatest “scientists” of the 18th and 19th centuries lacked academic credentials but made huge contributions to our current understanding of the natural world. Gilbert White, a rural clergyman, recorded his observations, many since confirmed, in *The Natural History of Selborne*. John James Audubon’s notes about the birds he painted provide a record of many species now rare (the Whooping Crane) or lost (the Passenger Pigeon). And perhaps the greatest 19th century naturalist, Charles Darwin, lacked formal training in the natural sciences: Consider his contributions to modern biology!

My own “career” as a citizen scientist began in the 1980s. I was leading a bird walk for the Lombard Park District in a since-developed area when a garter snake crawled across one woman’s shoe. My reflexes kicked in, and I bent down and caught it. “Look,” I exclaimed, “a Plains Garter Snake!” Holding the snake a few inches from the woman’s face was probably not the best idea, but this was the first of many snakes I would catch in DuPage County. To be truthful, my family had moved to Lombard only two weeks after I graduated high school in Milwaukee and just two months before my time would be consumed with university studies and earning money to pay for those studies, so I was well into my twenties before I could resurrect what had been a passion of my childhood and teen years.

I contacted the Forest Preserve District of DuPage County, thinking it would have a list of what I could expect to see and where I could see it. Dr. Dan Ludwig, who was the district’s wildlife conservation officer, contacted me and asked if I would like permission to search for snakes and other herptiles in the

district’s then-expanding forest preserves. What took me a while to realize was that the district, like many similar organizations, lacked any real knowledge of what plants and animals inhabited its preserves, let alone their abundance, distribution, and other factors. Thus began a decade of field research which served as part of the basis for later published reports.

This is how members of the Chicago Herpetological Society can make real contributions to our understanding not only of the animals which fascinate us, but other plants and animals as well. Literally scores if not hundreds of such opportunities exist, and I am glad to participate in a few.

One of the easiest projects to involve yourself with is eBird, a project of the Laboratory of Ornithology at Cornell University. By signing up at ebird.org, you can enter your bird sightings. When you record a sighting, you’ll be asked when and where you saw the bird; if you were on a field trip, you’ll be asked about how much time you spent birding and how you traveled. The project has been in existence for decades, and as a result, it has created a vast data base that bird scientists use to study population shifts, distribution, seasonal movements, and other areas affecting bird conservation. The Lab also provides other opportunities to be a citizen scientist, such as Project Feeder Watch. Participants in this project record the numbers and diversity of birds visiting their bird feeders during the winter months.

A similar project is iNaturalist (inaturalist.org): After registering, participants can upload photographs and recordings of plants and animals they have seen. I use my DSLR camera, but phone cameras work, too. The site pulls the date and time the observation was made from the photo, and the observer notes where the photo was taken. If the photographer is unsure about the species they’ve photographed, the site suggests a probable species. In my experience, the suggestions are correct most of the time. Finally, the submission is eventually reviewed by an “identifier” (often an academic with professional interest in particular plants or animals); if you and at least one identifier agree on the identification, the observation is considered “Research Grade.” Using the “Explore” feature, you can see what has been seen in an area (or even a specific site), as well as relative abundance. While writing this article, I checked Cook County reptiles: 28 species have been documented, with Pond Sliders (*Trachemys scripta*) being the most common (997 sightings), and exotic Brown Anoles (*Anolis sagrei*) also making the list.

A really nice feature of iNaturalist is that your observations can become part of ongoing research projects. Currently, my relevant observations are part of “Beetles of Florida,” “Biodiversity of the Morton Arboretum,” “Birds of Illinois,” “Butterflies of Illinois,” “College of DuPage—COD Natural Areas,” “Fauna of the Morton Arboretum,” “Florida Birds,” “Forest Preserve District of DuPage County,” and several more.

Sometimes the projects found me—I was asked to participate—and sometimes I found the project. In most cases, an entry is automatically shared with a project. In fact, when I joined several projects, my prior submissions to iNaturalist were found and recorded by the project.

Using iNaturalist and eBird allows me to overlap several of my interests. For the past four years, I have monitored butterflies on the Russell R. Kirt Prairie at College of DuPage. My monitoring is part of the ongoing work of the Illinois Butterfly Monitoring Network (ibmn.org), another citizen scientist project. The IBMN is connected to the CHS's own Peggy Notebaert Nature Museum, and its mission, to collect quantitative data on the state's butterfly population, has been going on for many years. After I registered with IBMN I was "assigned" a site (actually, part of my volunteering was dependent on using the site, a prairie developed from a student parking lot). The IBMN prescribes an exact, but not exacting, protocol in order to reduce variables, but essentially all I have to do is visit the site several times over the season and count the kinds and numbers of butterflies I spot. Since my pace is leisurely, I see lots besides butterflies, including dragonflies and damselflies, birds (which I count using my eBird app—you knew there'd be an app, right? There's one for iNaturalist, too), and the occasional oddity. For example, in 2022 I spotted and photographed a Northern Leopard Frog (*Lithobates pipiens*), only the second time one has been documented on the prairie and the first one documented since 2019.

Sooner or later, I spend an evening at my computer and enter my butterfly and dragonfly observations with two other citizen-science projects. I record my butterfly and moth observations and photographs with Butterflies and Moths of North America (BAMONA) (butterfliesandmoths.org) whose goal is to collect, store, and share species information and occurrence data. I record dragonfly and damselfly sightings and photographs on Odonata Central (odonatacentral.org). The process is similar with both projects: Register online, submit observations (Odonata Central doesn't require photographs, but BAMONA does), and have the photos vetted by specialists. Both projects enjoy pedigrees: BAMONA was started by the United States Geological Survey in 1995, and in 2011, because of congressional budget cuts, was taken over by a private-sector tech company. Odonata Central is a project of the Dragonfly Society of the Americas (when I want to practice my Spanish, I try reading their bulletin, *Agria*, in Spanish; professional and amateur dragonfly enthusiasts comprise its membership).

Probably more than a few CHS members are familiar with and participate in the Calling Frog Survey, which like the butterfly monitoring network is a citizen-science program of the Peggy Notebaert Nature Museum and Chicago Academy of Sciences (frogsurvey.org). The annual survey's goal is to monitor the abundance and distribution of frogs throughout the Chicago area. Workshops are held during the winter where participants can meet fellow enthusiasts and learn the methodology of surveying frog calls. The survey's web site features a guide to Chicagoland's frogs, including recordings of their calls.

I was surprised a few years ago when a friend who was very active on one of the projects I've covered here—for a number of years he held the record for the number of observations made and species seen—dismissed the data as unusable because the site was, in his view, social media, no different than Facebook or Twitter. I think the scientific community tends to disagree with him: I know in late summer for a number of years now my iNaturalist sightings enjoy a number of species confirmations due, I suspect, to graduate students searching for data for a thesis. My friend's misgivings raise an important point, though: Data quality is an issue for all citizen-science projects. Species can look very similar and indeed, the quality of a photograph can determine the accuracy of the identification, which is why most sites require someone besides the submitter to verify the sighting.

Another issue is observer bias. The most commonly reported bird on iNaturalist's "Birds of Illinois" is the American Robin. Is that the most common species in Illinois? Is it really 1.5 times more common than the familiar House Sparrow—or are observers ignoring the sparrow because it is rather drab compared to the robin? And in Collier County, Florida, where I do most of my herping these days, are American Alligators really twice as common as Brown Anoles? Or are they easier to photograph and simply more "dramatic"? In fact, of the almost three thousand animal species (and almost five thousand total species) recorded on iNaturalist for Collier County, the alligator is Number One. (Not to start a rivalry or anything similar, while writing this I checked and found that Cook County's most-reported reptile on iNaturalist is the Red-eared Slider. And DuPage County's is the Painted Turtle. I was also surprised to see that the milksnake, *Lampropeltis triangulum*, does not show up for DuPage County, although I personally observed a number of individuals at a couple of sites when I surveyed the county in the '80s and '90s.)

The absence of milksnake data for DuPage County brings me back to my original point: Researchers need some kind of baseline for their studies to be accepted as valid, but too often such a baseline is lacking. If iNaturalist had been around when I was surveying DuPage County's herptiles (it started in 2008 as a final project for some master's degree candidates at the University of California–Berkeley's School of Information), I would have used it. The same goes for eBird and the other projects I've described: I would have used them if they had existed at the time.

A few years ago I attempted to revisit many of the localities where I had once observed and collected animals. Some of the sites were gone, many altered beyond recognition, and snakes, salamanders, and other herptiles nowhere to be seen.

My own experiences, though, lead me to accept the essential truth of these two sayings (applicable here and to so many other things): First, don't let the perfect become the enemy of the good. Second, anything worth doing is worth doing poorly. And probably a third: The best time to plant a tree was yesterday; the second best time is today. I urge all my fellow CHS members to find a citizen-science project they can participate in and to support the project's work as best they can. Spending a little time at the computer will reveal many projects deserving of our interest and support.

Notes on the Herpetofauna of Western Mexico 32: First Record of Albinism in Sheep Frogs (*Hypopachus variolosus*) in Jalisco, Mexico

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Lydia Allison Fucsko⁵ and Larry David Wilson⁶

Abstract

In the course of sampling herpetofauna on 21 May 2023, we found a Northern Sheep Frog (*Hypopachus variolosus*) with a lack of pigment in the skin (albino). This discovery represents the first documented case of albinism in this species for the state and country.

Resumen

En un muestreo de herpetofauna el 21 de mayo de 2023, encontramos una Rana Oveja del Norte (*Hypopachus variolosus*) con falta de pigmento en la piel (albino). Este descubrimiento representa el primer caso de albinismo en esta especie para el estado y el país.

Introduction

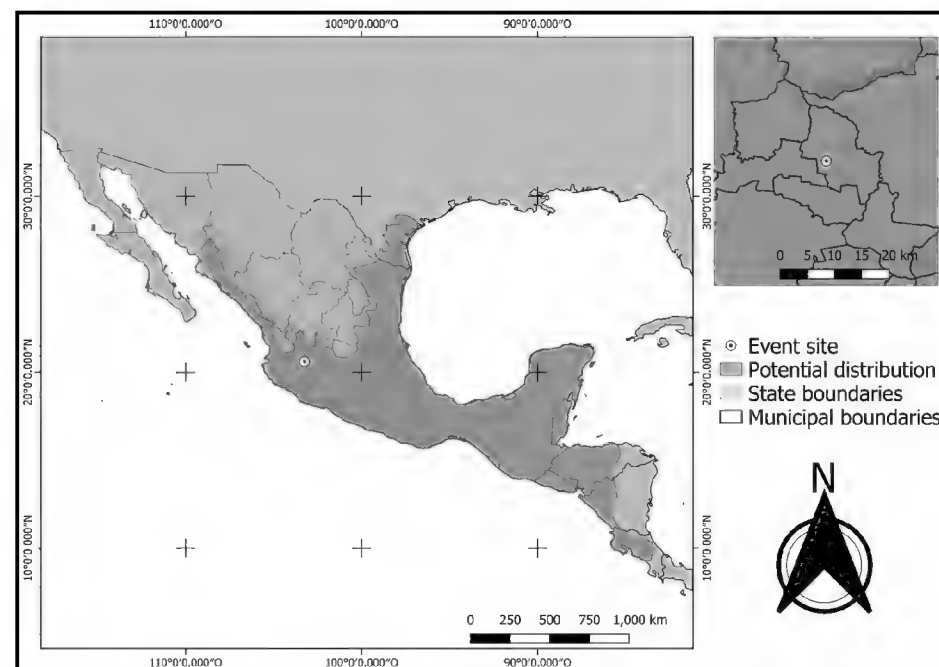
The herpetofauna of Jalisco, Mexico, comprises 223 species, including 47 anurans, four salamanders, one caecilian, one crocodilian, 158 squamates, and 12 turtles. The anuran diversity comprises 8 families, 18 genera, and 47 species. The families are Bufonidae (8 species), Craugastoridae (5 species), Eleuthero-dactylidae (8), Hylidae (12), Leptodactylidae (2), Microhylidae (2), and Ranidae (9) (Cruz-Sáenz et al., 2017). This extensive diversity requires us to be vigilant for novel observations. In this particular we set our eyes on the family Microhylidae with two very interesting members. We focus on the northern sheep frog, *Hypopachus variolosus*, one of two species in the genus *Hypopachus* resident in Jalisco (the other species is *H. ustus*, the two-spaded narrow-mouthed toad). Since the observation involves an albino, we mention a few details about this phenomenon in addition to the natural history of the species.



Albino *Hypopachus variolosus*. Photograph by Rosa María Ruiz-Álvarez

Background on albinism

Albinism is a genetically inherited condition that reduces the amount of melanin pigment that forms in the skin, hair, and/or eyes. This genetic condition is passed to offspring when both parents carry a recessive gene. When albinism is present, the animal can appear white or pink. An animal can be completely albino (pure albino) or exhibit leucism. Pure albino animals will have pink eyes, nails, skin, and/or scales. The type and amount of melanin the body determines the color of the skin, hair, and eyes. Melanin also plays a role in the development and function of the eyes, so people or animals with albinism have vision problems. Albinism occurs throughout the animal kingdom. The condition is most commonly seen in birds, reptiles, and amphibians, and is more rarely seen in mammals and other taxa (Oetting and King, 1999; Grønskov et al., 2007).



Location at which an albino *Hypopachus variolosus* was found. Tonalá, Jalisco. Map created by Edgar Emmanuel Hernández-Juárez.

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Two views of the avocado plantation on the outskirts of the Metropolitan Area of Guadalajara where the albino *Hypopachus variolosus* was found. Photographs by Rosa María Ruiz-Álvarez.

Albino frogs and other amphibians are of fairly common occurrence in nature. The eyes of such creatures appear red because the blood vessels of the retina show through the unpigmented iris. The eyes of albinistic animals tend to be highly sensitive to light due to the absence of melanin. (<http://allaboutfrogs.org/weird/strange/albino.html>).

Background on *Hypopachus variolosus* (Cope, 1866)

Hypopachus variolosus is a small frog with an adult snout–vent length of 40–47 mm. The body is robust, ovoid and/or triangular, the limbs are short and robust, the fingers lack interdigital membranes and are terminally widened, and a pair of elongated, keratinized tubercles are located on the heel. The head is small and triangular in shape, with a posterior transverse fold of skin present. The skin of this frog is smooth; the eyes have a horizontally elliptical pupil for night vision (Frost et al., 2006).

The diet of sheep frogs and other microhylids is specialized, involving predominantly ants and termites (Hymenoptera and Isoptera, respectively) (Brumwell, 1951; Freiburg, 1951; Fitch, 1956). Mulaik and Sollberger (1938) commented that adult sheep frogs driven from under mesquite trees during irrigation were found to have been feeding on termites and minute dipterous insects. These authors also reported an interesting behavior in captive specimens being fed on termites. Even though buried several inches underground, placing termites on the surface readily sparked them to go to the surface to feed. Dundee and Liner (1985) recorded the presence of ants in the gut of a sheep frog taken as a prey item by a milky tree frog / *rana arboricola lechera* (*Trachycephalus venulosa* [as *Phrynohyas venulosa*]) in Yucatán, Mexico.

Surface activity by sheep frogs is prompted by rainfall and the presence of ponds alongside paved or dirt roads, where their choruses are heard loudly. One of the co-authors of this paper (DL), riding at night after an intensive rainfall in order to tape their sound, found them only on one side of the road. On the following day, he found that they were not present on the other side of the road because the water in the pond had been rendered eutrophic by the presence of cow waste.

This species is found in all seven physiographic regions of the state of Jalisco: 1) Pacific Coastal Plain; 2) Sierra Madre Occidental; 3) Sierras Jaliscienses; 4) Trans-Mexican Volcanic Belt; 5) Sierra de Coalcomán; 6) Central Plateau; 7) Tepalcatepec Depression (Cruz-Sáenz et al., 2017).

Methods

Because of the steady growth of the Metropolitan Area of Guadalajara (MAG), one of the functions of the authors' laboratories is the consistent sampling of the activity undertaken by amphibians and reptiles within the MAG. This everyday sampling is extended to the entire state.

Results

In a sampling carried out within a piece of land located within the Metropolitan Area of Guadalajara where there is an avocado (*Persea americana*) plantation, we found an individual of the northern sheep frog (*Hypopachus variolosus*) with an atypical coloration, involving an absence of color throughout the dorsal and ventral portions of its body, as well a red coloration of its eyes. The individual has a 40 mm snout–vent length. The individual was released *in situ*.

Discussion and Conclusion

The Metropolitan Area of Guadalajara is included in the physiographic province of the Central Plateau, according to Cruz-Sáenz et al. (2017). The area where the frog was found is an urban section at edge of the city.

The presence of this species was recorded previously in the state of Jalisco and near the city of Guadalajara by Cruz-Sáenz et al. (2007, 2017), Cortés-Vázquez et al. (2022), and Salcido-Rodríguez et al. (2023). This species is not endemic to either Jalisco or Mexico; it does not have any type of protection under Mexican environmental laws, it is of low concern (LC), according to the IUCN and it is allocated to the low vulnerability EVS category (4), according to Wilson et al. (2013). The individual was captured to obtain photos and afterwards was released *in situ*. Another record of abnormal coloration for amphibians in

Jalisco was documented for the yellow-peppered salamander / *Ambystoma de la Lago de Chapala* (*Ambystoma flavipiperatum*), with leucistic coloration at Sierra de Quila (Cortés-Vázquez et al., 2017).

Acknowledgments

We would like to express our sincere gratitude to the Villa Fantasia Environmental Management Unit and the head of unit, Dr. Iñigo Mora. We also thank Dr. Antonio Chargoy and the biologist Sinai de la Torre for their support in the handling and photography of the specimen throughout the investigation.

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Herpetological Art at the Mesker Zoo and Botanic Garden, Evansville, Indiana—September 29, 2023

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After a few days of herping in southern Illinois, I decided to go east to Evansville, Indiana, to see if the Mesker Zoo had any herpetological art that I could photograph.

The Mesker Zoo and Botanic Garden covers 45 acres, with 140 species of animals on exhibit, and is AZA accredited. Their web site is www.meskerparkzoo.com.

The first herpetological statue that I saw was a large fiberglass green anaconda, *Eunectes murinus*. the statue is approximately five feet in diameter and is in a large enclosure with many South American birds flying around and a tapir down on the floor. The anaconda is coiled up on a ledge by the walkway where people can walk around the exhibit and seems faded, as if this replica has been here a very long time. This is all



in a building called Amazonia.

In the Discovery Center there is a large frame of wood and steel with the head of a large crocodile-like creature that, from the web site, the zoo has named Crocosaurus. The head is at least four feet long and of a rubber-like material, even the teeth. This whole structure looks as if it is intended to move the head back and forth. From the web site this seems to be something special that they are doing for their “BOO AT THE ZOO” Halloween event that requires the purchase of a special ticket to attend.

I found the contact link on their web site and asked about Crocosaurus. They told me that the image moves, lights up, growls and/or roars. The zoo’s Facebook page shows that they



added some artificial vegetation to make a jungle scene.

Also in the Discovery Center is a poster with information on the eastern hellbender, *Cryptobranchus alleganiensis alleganiensis*, and a replica of a hellbender that is approximately two feet long—the size of a large adult hellbender.



At the Family Garden, which has many flowers and other plants, an image of a snake is painted on the sidewalk. This image is approximately the length of three large pickup trucks parked bumper to bumper and is painted in many colors, with a red tongue. Part way down the body is painted the word “SQUIGGLES,” which I assume is the name of this snake.



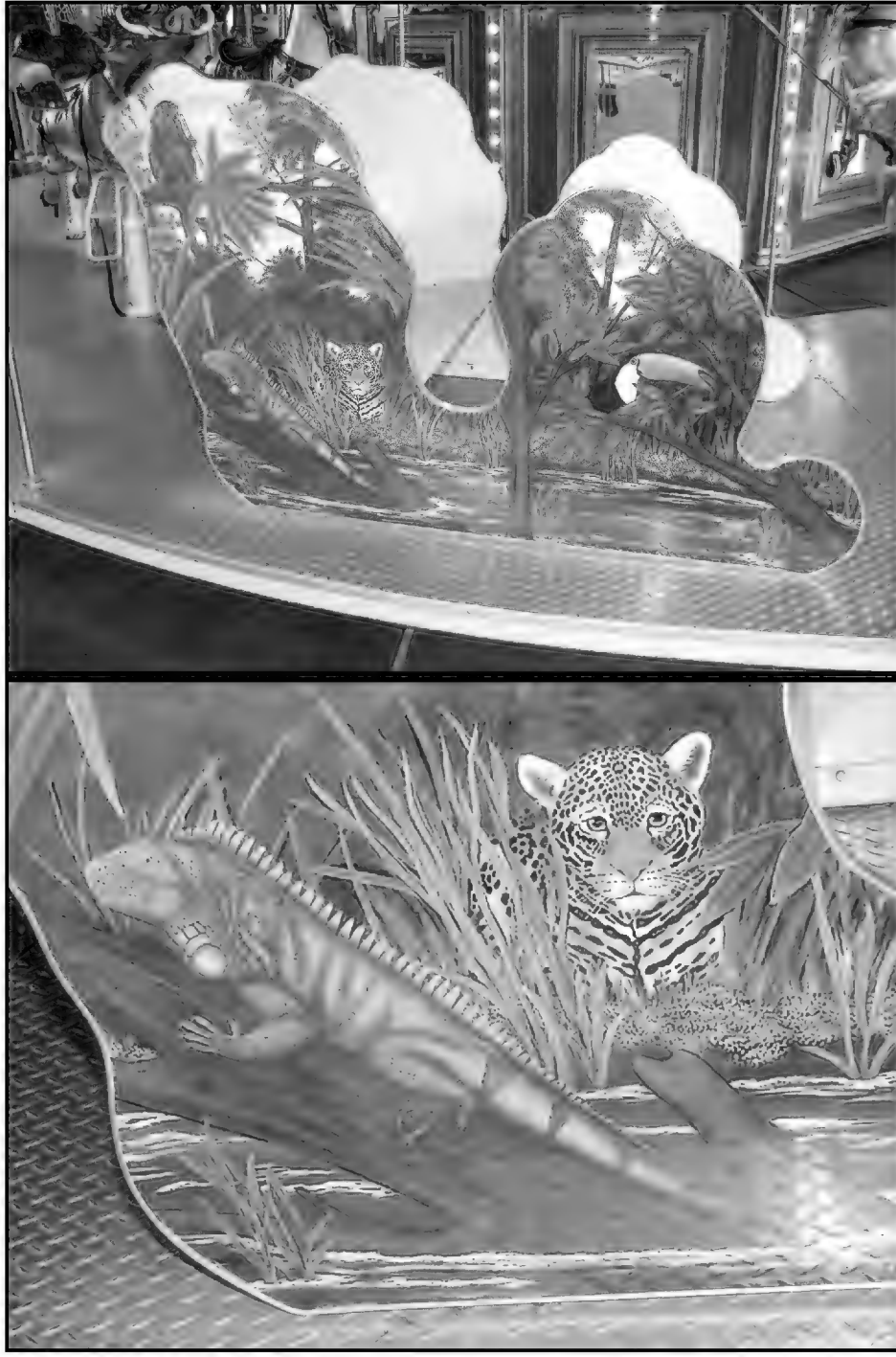
Also in the Family Garden is a sandbox for children to play in, and in the sandbox is a wooden turtle that is painted blue. This turtle is approximately three feet long and the head, neck



and legs seem to be made from two-by-fours.

There is a carousel near the “AFRICAN RIFT” display with rides modeled after animals that can be found in zoos. This carousel is indoors; all the other zoo carousels that I have seen are under a roof, but they are in the open. One of the rides is a sea turtle of some kind that seems to be colored correctly, there is a ride that is shaped like a frog which is colored green, and the saddle looks like an equestrian style saddle. There is a bench to ride on instead of riding on individual animals and the outward facing panel shows the painted image of a South American jungle scene with two monkeys, a toucan, a jaguar, and a green iguana, *Iguana iguana*.





Coming around the zoo near the front entrance and the gift shop is a children's playground identified as Donna's Playground (from the zoo map) and in the playground there is a statue of a large tortoise that is probably meant to represent a Galapagos tortoise. This statue is approximately three feet tall from the pavement to the top of the shell. I don't know what material this is made from, but it is very hard to the touch. The playground has the usual activities for children like swings and structures for them to climb on plus benches for parents to sit and watch their children. There is also a bronze statue of an adult hippopotamus with a baby.



Minutes of the CHS Board Meeting, December 12, 2023

A virtual meeting of the CHS board of directors via Zoom conference video/call was called to order at 7:33 P.M. Board members Gabrielle Evans, Tom Mikosz and Amelia Pollock were absent. CHS member Craig Bechtel was also present. Minutes of the November 14 board meeting were read and accepted.

Officers' reports

Treasurer: Rich Crowley informed the board that he would email the November financial report soon.

Media secretary: Kyle Houlihan will be helping to get meeting items posted on social media .

Membership secretary: Mike Dloogatch read the list of those whose memberships recently expired.

Sergeant-at-arms: in November the Junior Herpers' meeting had 15 attendees; 23 people were at the general meeting.

Committee reports

Junior Herpers: Caitlin Monesmith reported that the January meeting will feature tegus.

New Business

The Notebaert has informed us that there is an emerging shell fungal disease, and that a few of the museum's live turtles have tested positive. As a precaution they ask that we do not bring any turtles/tortoises to the museum.

The meeting adjourned at 8:35 P.M.

Respectfully submitted by recording secretary Gail Oomens

Herpetology 2024

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

MEASURING HOGNOSE DIETS

A. M. Durso et al. [2022, *Herpetologica* 78(2):119-132] note that wild animal diets are challenging to quantify, and the various methods for doing so have strengths and weaknesses. Combining multiple methods can allow ecologists to assess their level of confidence in particular results, increase sample size, and investigate diet over varying time scales. The biases of traditional gut content-based methods are mostly well understood. Newer methods may have important biases that can only be worked out through comparison to established ones. The authors collected data on the diet of wild Plains hog-nosed snakes (*Heterodon nasicus*) using multiple, fundamentally dissimilar methods, combined analytically using a Bayesian framework to describe an ontogenetic dietary shift. Gut contents were the most straightforward, but yielded a small sample size that fell below any reasonable threshold for making generalizations. Stable isotopes indicated an obvious ontogenetic dietary shift, but were labor-intensive, and conclusions are limited by multiple methodological caveats including similarity among prey groups, maternal carryover effects, and uncertainty in trophic enrichment factors. Fecal environmental DNA was intermediate in terms of effort, yielding results congruent with the other two methods. Interpretation would likely have been confounded by contaminants had the study not used all three methods in tandem. Several apparent artifacts are discussed. There are some reassuring similarities and also several differences among methods. The most complete picture uses data from all methods taken together. Future studies should attempt to compare the biases, expense, and potential drawbacks of these and other methods in greater detail.

LACK OF AGGRESSION BETWEEN NEONATES

M. Paulissen and K. Fletcher [2023, *Journal of Herpetology* 57(1):87-91] note that nearly all studies of lizard behavior have been conducted on adults. Therefore, an important part of the lizard life cycle has been overlooked, the neonate stage. Lizards hatch at about the same time, briefly causing high density and increased chances that neonates engage in aggressive encounters. The authors studied the behavior of neonate little brown skinks (*Scincella lateralis*) by staging a series of dyadic encounters between pairs of neonates in the laboratory. Two neonates were confined in an observation chamber on either side of a partition for 48 h. The partition was then removed, a single retreat was placed in the center of the observation chamber, and the behavior of the two neonates was recorded for 60 min. Neonate little brown skinks almost never showed aggressive behaviors, such as biting and chasing, exhibited by adults. Neonates segregated themselves on opposite sides of the observation chamber when active on the surface, but frequently simultaneously occupied the retreat, something that almost never happens in adults. Limited data on species of skinks that form stable aggregations suggest that retreat sharing by neonates or juveniles may be common in members of the Scincidae.

MASS BATHING BY SLOW WORMS

B. S. Johansen and G. I. Høines [2023, *The Herpetological Bulletin* 165:24-26] note that there have been few published reports of slow worms, *Anguis fragilis*, swimming or bathing, and where there are reports they describe only single individuals in water. These authors report repeated observations of mass bathing by slow worms (up to 12 individuals) on three different dates at six sites. All of the observations were made in August at shallow puddles in the interior of the island of Karmøy, north of the city of Stavanger, on the southwestern coast of Norway. All of the bathing slow worms appeared to be adult females with thickened bodies, implying that they were gravid. The temperature of the small puddles was not measured, but the authors speculate that the gravid female lizards were bathing in order to raise their body temperatures.

EAT OR BE EATEN?

T. Patharkar et al. [2022, *Herpetozoa* 35:209-212] note that *Podarcis* wall lizards mainly feed on coleopterans, orthopterans, arachnids, and other small invertebrates. However, Aegean wall lizards, *Podarcis erhardii*, are widely distributed across Aegean islands and increasingly have been observed eating non-traditional food items ranging from plant material to conspecific eggs and body parts. This report is the first documented case of *P. erhardii* consuming a large centipede, *Scolopendra cingulata*. The predator-prey relationship between these species has appeared to go both ways and may intensify on islands.

DISPERSAL TRAITS OF GREEN TREEFROGS

O. M. Edwards et al. [2023, *Journal of Herpetology* 57(2):151-158] report that since the 1980s, there has been rapid and ongoing hypothesized climate-related range expansion in native green treefrogs (*Hyla cinerea*) northward and eastward in Illinois, Kentucky and Indiana. Because anuran leg length is positively correlated with locomotor function, longer legs have been shown to facilitate dispersal of invasive anuran populations. These recent range-expansion populations of *H. cinerea* provide an ideal opportunity to test if a native frog species exhibits similar changes in dispersal-related traits to those found in invasive species. The authors tested if individuals on the front end of this expansion exhibit significant differences in femur length when compared with frogs collected from the historical-range distribution. They predicted that frogs found at the expansion edge would have longer femur lengths than their counterparts located in historical parts of the range. They found that relative to snout-vent length, the femur lengths (FL) of *H. cinerea* from expanded ranges were on average significantly larger than those of frogs from the historical range. This suggests that native expanded-range populations of this species have undergone changes in FL. Rapid shifts in morphological traits of a native species, *H. cinerea*, in expanded-range populations, appear to mimic morphological trade-offs observed for invasive species of anurans.

Chicago Herpetological Society
Income Statement: January 1 – December 31, 2023

Income		Expense	
Membership dues	\$ 6,443.40	Bulletin printing / mailing	9,743.82
Donations	5,939.26	Rent (storage)	2,936.00
Interest	2.54	Bank / PayPal / Square fees	236.08
Raffle	33.00	Donations	50.00
Miscellaneous	285.00	Liability insurance	1,335.00
		Dues, licenses and permits	670.27
		Miscellaneous supplies	17.24
		Postage	2,005.66
		General meeting expense	599.39
		Miscellaneous	15.80
Total Income	\$12,703.20	Total Expense	\$17,609.26

Net Income (Loss) (\$4,906.06)

Chicago Herpetological Society
Balance Sheet: December 31, 2023

Assets

Checking	\$ 4,030.76
Money market	2,980.61
Petty cash — show fund	350.00
PayPal	3,787.33
Postage on deposit	380.40

Total Assets **\$11,529.10**

Liabilities

Credit cards	<u>272.00</u>
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Equity

Retained earnings	16,163.16
Net income (loss)	<u>(4,906.06)</u>

Total Equity **\$11,257.10**

Total Liabilities & Equity **\$11,529.10**

UPCOMING MEETINGS

Monthly meetings of the Chicago Herpetological Society begin at 2:00 P.M. on the third Sunday of each month. Please try to join us online or *in person* at the Notebaert Nature Museum, 2430 N. Cannon Drive, Chicago. The next meeting will take place on January 21. The program will be a video that features **Dr. Phillip L. Skipwith**, an assistant professor in the Department of Biology at the University of Kentucky, speaking about adaptive radiation in Malagasy gemsnakes..

The speaker at the February 18 meeting will be **Lily Barajas**, manager of living collections at the Peggy Notebaert Nature Museum. Lily's talk will be about "Blanding's Turtles, Mysteries of the Marsh and More at the PNNM."

Please check the CHS website or Facebook page each month for information on the program. Information about attending a Zoom webinar can be found here:

<<https://support.zoom.us/hc/en-us/articles/115004954946-Joining-and-participating-in-a-webinar-attendee->>

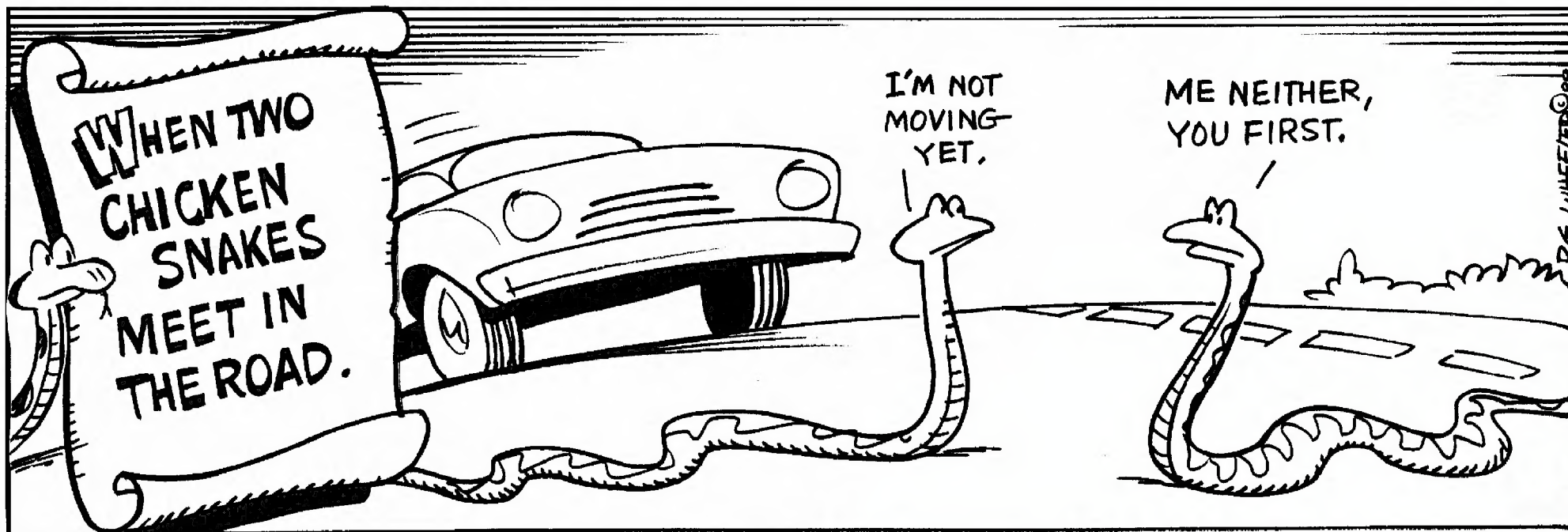
Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? The next board meeting will be held online. If you wish to take part, please email: rcrowley@chicagoherp.org.

NEW CHS MEMBERS THIS MONTH

Robert Brightman
Ashley Costello
Dennis W. Nyberg
Crissy Pellegrin

THE ADVENTURES OF SPOT



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